

M C P S E R V E R

N O C O D E

C L O U D H O S T E D

Bentonite Dose Optimization MCP

Control protein stability and minimize wine loss in the cellar.

Bentonite Dose Optimization MCP helps enologists manage protein stability with mathematical precision. Your AI client uses this tool to calculate exact bentonite requirements, predict sediment volume, and verify clay compatibility based on specific instability scores and wine volumes.

A+ Quality Score 100/100

bentonite

protein-stability

wine-production

dosage-optimization

cellar-management



The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest
managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.

— Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256

Encryption at rest

Ed25519

PKI vault signatures

24h TTL

Ephemeral session keys

V8 Isolate

Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT`https://edge.vinkius.com/{token}/mcp`

Claude



Cursor



VS Code



Windsurf



Grok



Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

06 — Honeypot Trap System

Phantom credentials are injected into isolated environments. If a honeypot is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1)
Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

Get started at cloud.vinkius.com — connect your AI agent in under 60 seconds.

Bentonite Dose Optimization MCP

4 tools available

Cloud-hosted on Vinkius

Managing protein stability shouldn't involve guesswork that leads to unnecessary wine loss. This MCP gives your AI client the specific math needed to handle bentonite treatments accurately. You can determine the exact amount of clay required for a specific volume using instability test results, ensuring you don't over-dose. It also helps you look ahead by predicting how much sediment will form and how much wine you'll likely lose during the process. Instead of manual calculations, your agent can check if a specific bentonite type is right for your current risk profile or decide if a batch or in-line treatment makes more sense for your setup. It turns raw instability data into actionable cellar instructions.

Core Capabilities

01 — Dose Calculation

Your agent calculates the minimum bentonite needed to achieve stability.

02 — Sediment Prediction

The AI estimates the volume of lees and potential wine loss before you start.

03 — Compatibility Checks

Your agent verifies if a specific clay type matches your wine's instability profile.

04 — Process Planning

The tool recommends between batch or in-line treatment modes.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/bentonite-dose-optimization — connect your AI agent in three steps.

- 01 Connect your AI client to the MCP via Vinkius.
- 02 Provide your instability scores and wine volume to your agent.
- 03 The agent uses the tools to calculate doses and predict impacts.
- 04 Receive specific dosing and treatment instructions directly in your chat interface.

Connect your AI client to the Vinkius-hosted MCP to start running calculations.

Built For

This MCP is built for professionals managing wine stability and cellar operations.

Enologists

They provide instability scores and wine volumes to get precise dosing instructions.

Cellar Managers

They use the tool to predict sediment impact and plan treatment modes.

Winemakers

They check clay compatibility to ensure protein stability without excessive loss.

What Changes When You Connect

- 01 Reduces wine loss by calculating the minimum necessary dose.
- 02 Predicts physical sediment impact to help manage cellar space.
- 03 Matches specific bentonite types to wine instability profiles.
- 04 Determines the most efficient treatment mode for your setup.

Real-World Applications

Minimizing Wine Loss

Calculate the exact dose needed to prevent over-treating and losing valuable liquid.

Clay Selection

Verify if a new bentonite type is compatible with your current wine profile.

Cellar Planning

Predict lees volume to prepare for sediment removal after treatment.

Operational Decisions

Decide between batch or in-line processing based on the specific treatment needs.

4 Tools Available

#	TOOL	DESCRIPTION
01	recommend_treatment_mode	This tool tells your agent whether to run a treatment as a single batch or through an in-line system.
02	calculate_minimum_dose	Use this to find the lowest amount of bentonite needed to hit stability targets based on your instability scores.
03	estimate_lees_impact	This tool predicts how much sediment will form and the resulting wine loss from a bentonite treatment.
04	validate_bentonite_compatibility	This tool checks if a specific bentonite type fits your current instability profile and risk constraints.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U How much bentonite do I need for 5000 liters of wine with an instability score of 0.8 and a low risk tolerance?



The minimum required dose is 450 grams for 5000 liters of wine.

U What will be the impact of using 500 grams of bentonite in 2000 liters of wine with standard activation?



The treatment will generate 12 liters of lees and an estimated wine loss of 2.5 liters.

U Is high-agitation bentonite suitable for a wine with an instability score of 0.5 and a risk tolerance of 0.2?



Yes, the bentonite is compatible with the current instability profile.

Frequently Asked Questions

01 How does this MCP help reduce wine loss?

It uses the `calculate_minimum_dose` tool to find the lowest amount of bentonite required to reach stability, preventing the over-dosing that leads to excess wine loss.

02 Can I use this with Claude or Cursor?

Yes, you can connect this MCP to any MCP-compatible client like Claude, Cursor, or Windsurf.

03 What kind of data do I need to provide?

You typically need to provide the wine volume, instability scores, and your specific risk tolerance or clay type.

04 Does it predict sediment volume?

Yes, the `estimate_lees_impact` tool predicts the physical consequences of the treatment, including sediment volume and wine loss.

05 Can it help choose between batch and in-line processing?

Yes, the `recommend_treatment_mode` tool advises whether a single batch or an in-line system is better for the treatment.

06 How does this tool help prevent overfining?

The `calculate_minimum_dose` tool incorporates a risk tolerance parameter, allowing you to adjust the dosage to avoid stripping desirable proteins and flavors.

07 Can I predict how much wine I will lose during treatment?

Yes, by using the `estimate_lees_impact` tool, you can calculate the estimated wine loss resulting from the volume of lees generated by your bentonite dose.

08 What is the difference between batch and in-line treatment?

The `recommend_treatment_mode` tool advises whether to use batch treatment for smaller volumes or in-line treatment for large volumes requiring high precision.

Go Live in 60 Seconds

Get your connection token from cloud.vinkius.com, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

`https://edge.vinkius.com/[TOKEN]/mcp`

CLIENT	WHERE TO CONFIGURE
 Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
 Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
 VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add <code>"bentonite-dose-optimization": { "url": "..." }</code>
 Windsurf	MCP Settings → <code>mcp_settings.json</code> → Add endpoint URL
 ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
 Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

-  Ask ChatGPT 
-  Ask Claude 
-  Ask Perplexity 
-  Ask Gemini 
-  Ask Grok 

READY TO CONNECT

Bentonite Dose Optimization is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and
start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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DOCUMENT INFORMATION

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Platform	Vinkius Cloud for AI Agents
Endpoint	https://edge.vinkius.com/{token}/mcp

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